(a) whether Government is aware that as per the Research and Development statistics 2004-05, the number of scientists per million people in India is only 110 and per capita spending on R&D is $3.53 which is far below than many other countries in Asia; and

(b) if so, what steps have been taken to enhance the strength of scientists and per capita R&D expenditure in India?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) According to the latest R&D Statistics 2007-08, the number of scientists per million people in India is 140 and per capita spending on R&D is US $ 5.90 which is ahead of most of the Asian countries excepting China, Japan and Korea.

(b) The Government have taken various steps to enhance per capita R&D expenditure in India and attract scientific talent for research. These measures include higher allocation for scientific research from Plan to Plan, setting up of new institutions for science education and research, creation of centres of excellence and facilities in emerging and frontline areas in academic and national institutes, induction of new and attractive fellowships such as INSPIRE, BOYSCAST etc., strengthening infrastructure for R&D in universities, offering attractive salary packages along with incentives, encouraging public-private R&D partnerships, national awards for outstanding R&D etc. Accordingly, the Government have enhanced Eleventh plan allocation for Scientific Departments to Rs.75,304.00 crores from Rs. 25,301.35 crores during Tenth Plan.

Use of obsolete technology by Indian industries

†386. SHRI LALIT KISHORE CHATURVEDI: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether it is a fact that majority of the industries functional in India are not able to withstand competition in the International market due to outdated and obsolete technology used by them;

(b) whether it is also a fact that imported technology leads to the international exploitation of labourers and it inhibits the technological advancement in the country;

(c) whether it is also a fact that the development of technology has not remained independent in the name of intellectual property rights and patents;

(d) the percentage of the expenditure incurred on research and development in India; and

(e) the outcomes of these in the last decade?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) It is true that majority of industries functioning in India, particularly in the SME sector are unable to withstand competition in the international market due to outdated and obsolete technology used by them. However, many industries in the public as well as the private sector have developed manufacturing technologies, indigenously or through adaptation of imported technology for competing successfully in the international market.

†Original notice of the question was received in Hindi.

(b) Imported technology does not lead to international exploitation of labourers. In fact, imported technology helps industries in the country to carry on with their businesses and saves them time, efforts and resources in developing the same technologies in-house. Although imported technology by itself prevents industry from becoming a global player since it does not bring in the latest state-of-the-art technology, Indian industries in some sectors have been able to absorb the imported technology successfully and develop it further indigenously, contributing to the technological advancement of the sector.

(c) Development of technology has certainly not remained independent of intellectual property rights and patents granted in various technical fields. Now, development of any new technology usually starts with a patent search in the concerned field to find out about the research work already done, so as to avoid reinventing the wheel and formulating the technology development problem appropriately with a view to add value to existing research and development work and generate new intellectual property or patents.

(d) According to the Research and Development Statistics published by the Department of Science and Technology (DST), the percentage of expenditure incurred on research and development in India was 0.89% of Gross National Product (GNP) in 2005-06 or Rs. 28,777 crore in absolute terms. The projected R&D expenditure for 2007-08 is Rs. 37,778 crore.

(e) The usual R and D output indicators are patents granted and research papers published. According to the Research and Development Statistics published by the Department of Science and Technology, patents granted to Indians in India increased from 293 in 1996-97 to 1907 in 2006-07 and research papers published from India increased from 51002 in 1993 to 68830 in 2003. Other R and D output indicators are products, processes, import substitutes and design prototypes developed and consultancy services rendered by the public and private sector institutions and industries as outcome of R and D carried out by them. According to the statistics for the year 1999-2000 published by DST, 6056 products, 2233 processes, 2667 import substitutes and 4193 design prototypes were developed and 35568 consultancy services were rendered by the public and private sector institutions and industries.

Benefits from TIFAC sponsored project

†387. SHRI BHAGAT SINGH KOSHYARI: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether some time back his Ministry had inaugurated a mobile hospital and research unit for the improvement of health and medical services; and

(b) the benefits by this Technology Information, Forecasting and Assessment Council (TIFAC) sponsored project and the type of research material made available through this medium?

---

†Original notice of the question was received in Hindi.